

swiftly flowing water. Notable among these is *Erioptera claripennis* Alexander of South Africa (Wood, 1952). *E. claripennis*, too, has elongate lobes of the spiracular disk. This latter condition is also found among members of the subgenus *Elaeophila* of the genus *Limnophila*. The members of this subgenus are found quite often in the same type of habitat described above for *Cryptolabis*. The extended lobes aid the larvae of *Cryptolabis* in maintaining their position in streams, with the long setae entwining in the filamentous algae which are adhering to the substrate. Consequently, these characters suggest a close correlation of structure to habitat, and this must be considered when using these characters in the placement of the genus within the Eriopterini.

#### LITERATURE CITED

ALEXANDER, C. P.

1956. Tipulidae. Ruwenzori Expedition, 1934-35. British Museum (Natural History), 1(7): 129-380.

1962. Undescribed species of Nearctic Tipulidae (Diptera). II. Great Basin Nat., 22: 1-7.

WOOD, H. G.

1952. The crane-flies of the South-West Cape (Diptera, Tipuloidea). Ann. S. African Mus., 39: 1-327.

#### A NEW OEDIPODINE GRASSHOPPER FROM CALIFORNIA (Orthoptera: Acrididae)

H. F. STROHECKER AND GEORGE M. BUXTON

*University of Miami and California Department of Agriculture*

Field studies by personnel of the California State Department of Agriculture have resulted in the finding of *Aerochoreutes carlinianus* (Thomas) in California; two males and a female have been studied. These specimens, from Grass Valley in western Nevada County, are referable, on the basis of head structure, to the race *streptitus* Rehn, and the wing venation of one of the males also accords with the pattern of this race. The other male, however, presents a wing venation more like that of *carlinianus* proper. The wings are hyaline with dark veins and veinlets, the radiate veins with dark "pencilling" (Rehn 1921, Trans Amer. Ent. Soc. 47:171-197. The body and tegmina are dun colored, similar in appearance to Great Basin specimens.

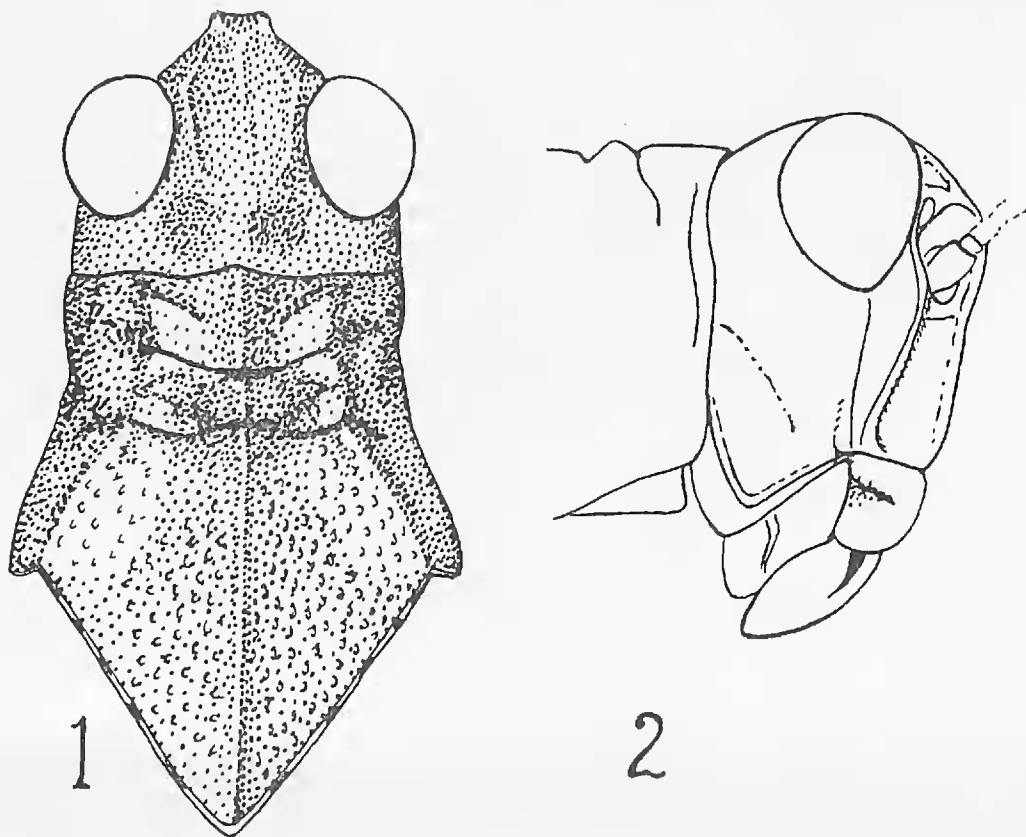
These field studies have also led to the accumulation of a series of *Aerochoreutes* from localities in the Coast Range of northern California. While the wing structure of these insects is that of *Aerochoreutes* the sum of their characters makes identification

with either race of *carlinianus* unsatisfactory.

*Aerochoreutes stenometopus* Strohecker & Buxton, new species

(Figs. 1, 2)

*Male*: slender for the genus, compressed, its habitus that of a *Trimerotropis*. Antennae stouter than in *carlinianus*, a little longer than head and pronotum combined, basal articles, except first two, considerably flattened, those distal to mid-length subcylindrical, none twice as long as broad. Head with frontal costa deeply sulcate below the ocellus, which lies under a transverse ridge. Above this ridge the costa is moderately widened, tumid, with a circular impression. Fastigium as long as wide, no wider than the dorsal width of an eye, shallowly sulcate with weak median carina. Foveolae long-triangular. Eyes very large and prominent, their depth equal to or exceeding the length of the genal groove. Pronotum elongate, lateral carinae rather sharply developed on front of metazone, traceable as callosities on prozone. Median carina tumid on prozone, linear on metazone. Disc of metazone flat, granulate. Lateral lobes perpendicular, deeper than long. Anterior margin of pronotum subangulately advanced on the occiput, posterior margin acute-angulate (about  $70^\circ$ ), the sides of the angle almost straight, the apex narrowly rounded. Tegmina surpassing tips of hind femora by less than one-third tegminal length, their contour and venation normal for the genus. Wing with contour and venation as in nominate *carlinianus*, all the superjacent radiate veins enlarged, 4-6 stouter than those preceding but narrowing basad and tapering distad. Ulnar vein very feebly undulate basad but producing no marked difference in the width of median and ulnar areas in



EXPLANATION OF FIGURES

*Aerochoreutes stenometopus* Strohecker and Buxton: fig. 1, head, pronotum of male in dorsal view; fig. 2, head of male in lateral view.

its middle third. *Coloration*: dark gray overall, fastigium, occiput, disc of pronotum and thoracic pleura darker. Prozonal portion of lateral lobe fuscous with three more or less distinct white spots, two above and one below. A broad whitish band runs along each side of the dorsum from the front margin of pronotum to the humeral angle, the bands wider on metazone. Hind femur gray with some poorly defined dark areas on outer face, lower sulcus yellow with preapical dark band, inner face yellow with two black bands but in some specimens the basal half is suffused with black. Tegmen dark gray, the basal third darker. In some specimens there is an incomplete fuscous cross-band near the middle of the tegmen. Wing with disc and veins of radiate field pale yellow, the swollen veins with dark "pencilling" distad only and this lacking on 4-6. In the antero-distal portion of the wing the membrane is hyaline with dark veining, and a group of dark veinlets in the basal half of the median and ulnar areas appears as a diffuse cloud.

Measurements (mm.): length of pronotum 5.5-6.5 ( $5.92 \pm .27$ ); of tegmen 22-24; of hind femur 11-12.5 ( $11.70 \pm .35$ ). *Female*: larger, more robust and less compressed than male. Antenna slenderer than in male, some of its middle articles almost twice as long as wide. Frontal costa deeply sulcate below the ocellus, slightly sulcate above, widened at level of antennal bases. Fastigium slightly wider than long, about as in male of *carlinianus strepitus*. Eyes large and prominent, dorsal width of eye slightly less than maximum width of fastigium, its depth hardly less than the length of genal groove. Pronotum generally similar to that of male, more widened behind, its posterior margin decidedly acute-angulate, the sides of the angle straight, the apex sharply rounded. The wing differs from that of the male in the usual sexual features, i.e. it is of narrower form and the radiate veins are less swollen.

Measurements (mm.): length of pronotum 6.7-7.4 ( $7.04 \pm .21$ ); of tegmen 27-30; of hind femur 13.0-14.0 ( $13.5 \pm .32$ ).

*Holotype male* and allotype from Telephone Camp Ground, Glenn County, California, August 20, 1958, P. H. Arnaud and H. H. Keifer (California Department of Agriculture).

*Paratypes*: 15 males and 6 females with same data as holotype; 7 males and 1 female, 3.5 miles north of Black Butte Mts., Mendocino County, August 27, 1953, F. L. Blanc; 3 males and 4 females; 1 male and 1 female, Plaskett Meadows, Glenn County, September 14, 1960, G. M. Buxton; 4 males and 1 female, Cold Springs, South Fork Mt., Trinity County, September 18, 1962, F. L. Blanc and G. M. Buxton.

*A. stenometopus* may be distinguished from other forms of the genus by the pale yellow color of the wing disc and radiate veins. Its narrower fastigium, stout antennae and acutely angled pronotum are other distinguishing features. The similarity of all the specimens listed above is so great that material from all localities has been treated together.

Plaskett Meadows, Telephone Camp Ground, Grindstone Can-

yon, and the site three miles north of Black Butte are, in a broad sense, the same collection locale. These places are readily accessible by the Alder Springs Road, which proceeds from the Plaskett Ranger Station in a northwesterly direction through the northwest corner of Glenn County and into southeastern Mendocino County. The road and adjacent ridge and the highest part of the range between the ocean fifty miles to the west and the Sacramento Valley to the east. The ridge is particularly humid and the dwarfed vegetation along the crest attests the heavy snowpack. The wind, from the west, is constant and brisk. Vegetation is locally sparse and large dusty areas appear as the short summer season advances. The Cold Springs area of the South Fork Mountain of Trinity County is very similar to the Glenn-Mendocino County site. The elevation of these separate ridges is between 5,800 and 6,500 feet.

The flight habits of *A. stenometopus* are similar to those of *Circotettix* spp.; the insect after taking off rises to a height of perhaps fifteen to thirty feet, then snaps at irregular intervals before gliding down and alighting.

The Sacramento Valley apparently forms a barrier sufficient to separate this Coast Range form from more eastern populations of *Aerochoreutes*. The genus has not been recorded from Oregon but has been collected just east of Prineville by Mr. Kenneth Goeden and identified by Dr. Ashley Gurney as *carlinianus*. Dr. Gurney has compared specimens of *stenometopus* with Oregon material of *carlinianus* and has assisted us further by sending a male from the Prineville area for our study. We have given specific designation to the Coast Range population since comparison of the series from this area with Oregon material and eastern California specimens of *carlinianus* gives no evidence of intergradation. The specific name is an adjective derived from *stenos στενος* (narrow) and *metopon μετωπον* (forehead).

Study of *Circotettix maculatus* Scudder along with the species of *Aerochoreutes* suggests that the latter genus may be broadened to include *maculatus*, which was removed from *Circotettix* by Rehn, without re-assignment. The wing of *maculatus*, while narrower and with less swollen radiate veins than that of *stenometopus*, shows considerable similarity of venation, and the two insects are in other features much alike.